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Soybean Digest



Official Publication
OF
THE AMERICAN SOYBEAN ASSOCIATION

VOLUME 5 • NUMBER 2



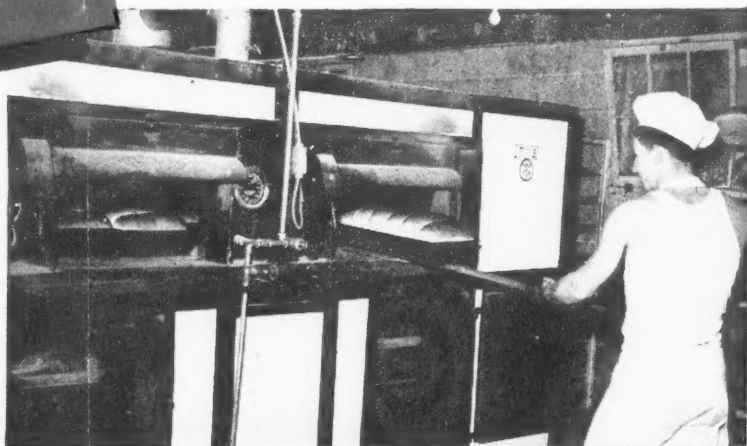
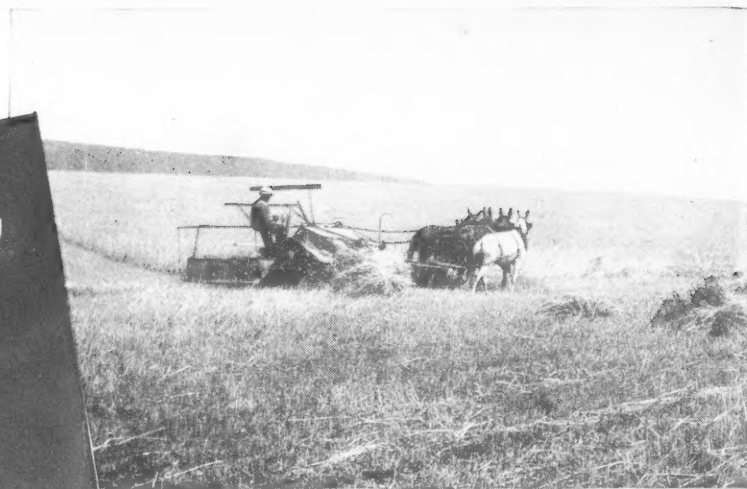
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THE Soybean Digest

GEO. M. STRAYER, Editor

KENT PELLETT, Managing Editor

Publishers' Representatives: Ewing Hutchison Co., Chicago

Vol. 5

DECEMBER ☆ 1944

No. 2

Published on the 15th of each month at Hudson, Iowa, by the American Soybean Association. Entered as second class matter November 20, 1940, at the postoffice at Hudson, Iowa, under the Act of March 3, 1879. Forms close on 1st of month. Subscription price to association members, \$1.00 per year; to non-members, \$1.50 per year.

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Agriculture Remembers

Reports are circulating that fall of the Philippines may release coconut oil to the United States.

The amount available for possible shipment, and the availability of shipping space, seem somewhat uncertain factors. Government experts are not counting on any oil from the Philippines in setting fats and oils production goals for 1944-45.

But the problem, and many like problems, may rise up to plague the American farmer.

Washington representatives of the Philippines are reported to be worried about this country's postwar tariff policy. Perhaps this is well. The Philippines should not be kept in uncertainty.

Agriculture well remembers the promises made — promises of protection and of the maintenance of a sound and prosperous farm economy. That is an impossibility if we are to be in direct competition with peasant or cheap labor.

During this war period no one in America has suffered from the absence of coconut and other foreign oils. Domestic vegetable oils have served admirably. Only the experts could determine the difference in most products when domestic oils were substituted for coconut or other foreign oils. Many distinct improvements were noted. In past years lower price has been the dominating factor in

selecting foreign oils, even with a 3-cent processing tax added to oil produced from Philippine copra.

A number of congressmen have indicated that they favor tariffs on fats and oils imports in order to protect domestic producers and insure continued acreages. An eastern publication quotes War Food Administration to the effect that soybean and peanut growers have not entered protests against a possible big postwar inflow of coconut oil.

This comment seems strange. Soybean growers have kept in touch with Cornbelt congressmen on this subject over a considerable period of time. Congressional representatives know where soybean growers stand on the matter. IT IS INCONCEIVABLE THAT THE GOVERNMENT, AFTER BUILDING UP DOMESTIC PRODUCTION OF FATS AND OILS, WOULD EVEN CONSIDER THE ADMITTANCE OF ANY FOREIGN OIL, AT LEAST UNTIL AFTER THE ADJUSTMENTS HAD BEEN MADE TO POSTWAR ECONOMY.

Any other course would touch off a genuine explosion of protest from the flax fields of the Canadian border to the cotton and peanut fields of the deep south; from the Atlantic across the wide expanses of soybean acreage in the great gardens of the Cornbelt and into the far west.

Domestic fats and oils have proved their case. THERE IS NO MORE REASON TO IMPORT FATS AND OILS THAN TO IMPORT AUTOMOBILES, ELECTRIC REFRIGERATORS, RADIO SETS OR RAILROAD LOCOMOTIVES. That briefly is the thinking of the American farmer today. It is well, while we are at war, to keep the record clear.

— s b d —

A. S. A. DIRECTOR FROM MISSOURI

Photo at right introduces the new director of the American Soybean Association from Missouri, Harry A. Plattner of Malta Bend.

Not only is Harry an ardent soybeaner, but on his 652 acres in Saline County he practices a well-balanced system of farming. He holds both Master Farmer and Master Conservationist titles and for two years was president of the Missouri state Conservation Federation.

Plattner is the second director of the Association from Missouri in recent years. He was elected at the Silver Jubilee meeting to succeed Roy H. Monier of Carrollton.



PLATTNER

The American Soybean Association

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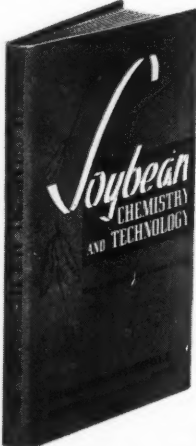
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Government and the Grower

By G. H. IFTNER

SOYBEAN growers in the postwar era will expect little more from government than they received in the immediate pre-war years, judging from the reaction of representative producers who have expressed opinion on the subject.

Growers may be expected to look to governmental agencies for some activity in postwar years in four areas of the industry—namely: (1) production, (2) marketing, (3) processing, and (4) industrial uses and consumption.

The degree of their interest will be greater in the field of production and lesser in the industrial division of the industry.

PRODUCTION

Soybeans have become an important crop in Midwest agriculture because they have been a profitable crop. Soybeans became profitable because governmental agencies, through investigations and research, brought forth improved varieties and cultural practices, enabling growers en masse to grow the crop successfully. It was the Division of Forage Crops and Grasses of the U. S. Department of Agriculture, cooperating with various state agricultural experiment stations and pioneer growers that placed soybeans high on the list of farm crops produced in the prewar period. The work of these agencies is not finished. Therefore producers will expect them to carry on experimentally in the postwar years, particularly along these lines: Control of diseases and insects, variety studies, determination of oil and protein content, fertilization, inoculation, livestock nutrition, harvesting and storage factors, and cultural methods.

The activities of the U. S. Department of Agriculture and the state experiment stations soon became known to farmers and were quickly capitalized by farmers because of the activities in most counties of a governmental agency—the extension service. State extension workers and county agricultural agents and farm advisers were quick to realize the potential value of soybeans in farming plans. They gave the soybean a boost by demonstrating improved varieties and cultural practices. New results still remain to be interpreted and placed at the disposal of growers.

No appreciative grower will expect less of these governmental activities in the postwar agriculture than he has enjoyed in the past. Extension activities are well established in all soybean producing areas.

The Agricultural Adjustment Administration and subsidiary county agricultural conservation associations are governmental agencies that have had to consider the place of the soybean crop in the adjustment and conservation program. These agencies were largely responsible for the rapid increase in acreage (1,008,000 acres in 1930 to



IFTNER

4,417,000 acres in 1939) in the thirties and the doubling of acreage (4,779,000 acres in 1940 to 10,500,000 acres in 1943) in the early forties, due to the urgent need of oil for the war effort.

The October issue of *Illinois Farm Economics* points out that there was a greater shift in oil crops, largely soybeans, than in any other crop in the period, 1910 to 1943. Using the period, 1910 to 1914, as a base, there was a 326 percent increase in the period, 1930 to 1940, and in 1942 to 1943, there was an increase of 240 percent over 1938 to 1940.

It can now be stated that soybean growers specifically, and the public generally, are becoming conservation conscious.

In recent years, the citizens of the republic have come to look upon the soil as the nation's greatest asset. Public support of soil conservation districts and the readiness of whole areas to organize local administrative districts by vote are sufficient proof of the above statement.

Technicians, agronomists and other specialists employed to carry out conservation programs are aware of the danger of soil erosion losses from fields carrying any substantial degree of slope. So are farmers. It is safe to assume that soybeans will be kept in their rightful place in cropping systems and on rolling farms in the after war years by this agency of government, for it will have increasing support from land owners and operators alike.

● *Has government support during war years spoiled growers or are they still willing to take their chances in the open market? the author asks. He is director of grain marketing for Illinois Agricultural Association.*

MARKETING

Producers are becoming more interested in the problems associated with the marketing of the soybean and if present trends continue, there will be an increased volume of the crop passing through cooperative marketing agencies.

Since the days of Theodore Roosevelt, whose Country Life Commission gave a boost to cooperative activity, the United States government has encouraged cooperation among farm groups, while past governmental support has taken various forms and has had varying degrees of effectiveness; on the whole, there is ample evidence that encouragement of cooperatives has been a national policy, especially in the U. S. Department of Agriculture.

Soybean producers realize that eternal vigilance will be required in the face of anti-cooperative forces if cooperatives will continue to serve them as their product moves from farm to processors. Cooperatives will continue to need government sanction, enabling legislation and credit facilities, such as provided by the banks for cooperatives of Farm Credit Administration.

Closely associated with marketing processes is the matter of soybean grade standards and interpretation. The Grain Exchange Act has made improvements from time to time but continued improvements in the act and practical interpretations are necessary in the future if producers are to receive correct grades and prices for their product. Producers anticipate postwar activity on the part of those regulating agencies having to do with marketing acts and exchange regulations.

In war time, the soybean has been as important as corn and wheat in the ever-normal granary. After the war, this nation will continue the ever-normal granary (in fact, it will insist on adequate reserves) in order to safeguard its food supplies in the lean years. Just where the soybean will fit in in postwar developments is open to some speculation.

The importance of soybean oil in the war effort? We might have lost the war without it. The role of soybean oil meal in livestock production—and the American people, despite rationing have not lost appetite for steaks and chops—and recent studies in human nutrition and industrial uses of soybeans and their products, all serve to indicate that more space will be allotted this new crop in the ever-normal granary.

It is unlikely that the nation will go along without some reserves of fats and oils since they are so essential in war time. Since high quality beans store well, it is safe to assume that government, probably Commodity Credit Corporation will be extended and will carry over reserves in the form of beans in the ever-normal granary. To many

producers, the government is the logical agency to assume this responsibility.

Producers will want the continuance of Commodity Credit Corporation as a sort of holding company for ever-normal granary. Many functions, such as payment of subsidies and the financing of processing activities can be dispensed with immediately after the shooting stops.

The government support of soybean prices during war years may have spoiled many producers and caused some of them to waiver from their prewar position favoring a free economy. Just what effect the recession in bean acreage and prices in the postwar period will have on the growers' attitude toward the free and open market as compared with the government regulated economy is not known. The farmer has been considered an individualist—slow to organize and a capitalist by the very nature of his business. In all probability, the farmer will lean heavily toward the free economy and away from regulations and regimentation.

For the ultimate good of the democratic form of government in this republic, it is hoped that this assumption proves correct.

PROCESSING

Producers' interest in the field of processing has shown marked increase in recent years. This was due principally to the shortage of protein, notably soybean meal in 1942-43 and early 1944.

The possibility of developing efficient community sized processing plants has not

escaped attention. There is a desire on the part of producers in many progressive communities for further research on the part of regional laboratories, especially the one located at Peoria, Ill. Since this laboratory was delegated the responsibility for carrying on research work on soybeans, producers will expect the staff to carry on extensive experiments in all lines of soybean production and use.

Improved methods of processing and known standards of products, both for human and animal consumption will enable producers to give the soybean its proper place in the agriculture and industry of the Midwest and of the nation.

INDUSTRIAL USES

The soybean grower is only indirectly interested in the role government will play in industrial uses of soy products. Except for knowing that soybean oil must compete with other vegetable oils and that a tariff policy may have a direct bearing on soybean prices, the average grower is not greatly concerned. He will produce the beans and get them to market, if prices are right. At some future date the growers may organize and follow their product cooperatively from the farm clear across the board to the tables of consumers. He may take an active hand in developing plastics, rubber substitutes, synthetic products, etc. In that event, growers will expect government sanction and protection, but not favoritism.

SOYBEANS

from now on

By G. H. BANKS

Purina Mills, Kansas City, Mo.
Presented at the Audrian County, Mo.,
annual soybean banquet, December 4.

The big temptation to a speaker in my position is to say what will be pleasant to the listeners. Here I am, an enthusiast in behalf of soybeans for more than 30 years, talking to the best soybean growers in Audrian County, which in turn, is one of the best soybean counties in Missouri. How easy it would be, and how pleasant it would be, to dip my brush in rainbow colors and depict upon the canvas of your enthusiasm



BANKS

a beautiful vista, with substantial profits from the soybeans leading us ever onward and upward. Maybe I'm romantic by nature, but with a combination of children in uniform, and the ravages of Father Time, I have become a realist in recent years. And I'm going to say what I believe, regardless of how it affects my listeners.

In accounting we have debits and credits; in debate we have affirmative and negative; in baseball a pitch is either a strike or a ball. With a subject as important as the soybean, we are bound to have considerations favorable and otherwise when we look at the thing from all sides. Therefore, let us list some of the "pros" and "cons" that come logically into our soybean outlook thinking.

Favorable indeed is the price for beans in 1944 and we are informed unofficially that the same price will obtain for the 1945 crop. O. R. Johnson, of the Missouri Department of Agricultural Economics said recently, however, "Present prices are highly artificial," and that is true. The support price keeps the farmer's price of beans UP; but it is also true that the ceilings tend to keep DOWN the price of soybean oil meal and soybean oil. Generally it seems fair to say that in our postwar economy, when other commodities go down in price, so will soybeans. But what of relationship with other standard farm crops?

CORN AND SOYBEANS

In the 10-year period 1930-39, corn for Missouri averaged 20.6 bushels per acre and sold for 58.4c per bushel, \$12.03 per acre. At the same time beans averaged 8.3 bushels per acre and sold for 86c or \$7.05 per acre. This would look bad for our friend the soybean unless you took several factors into consideration: (1) Corn was more generally planted on the fertile land, and on the more

(Continued on page 15)

A. S. A. Board Favors Ban on Foreign Oils

The annual winter meeting of the board of directors of the American Soybean Association held in Chicago December 5 was featured by extended discussion of the position to be taken by the Association on the importation of foreign fats and oils.

Establishment of a definite policy on this matter was deemed essential, and the outcome is voiced in the editorial, "Agriculture Remembers," carried in this issue of the *Soybean Digest*. It was the contention of members of the board that American agriculture must start now to fight to protect its gains against pressure from other groups within the nation, and to make its aims and position clear.

Revision of the constitution and bylaws of A. S. A. to permit filing of articles of incorporation of the Association was authorized, and the machinery established for making that forward move. The constitution revision committee previously appointed, consisting of K. E. Beeson, Indiana; Jacob Hartz, Arkansas, and G. G. McIlroy, Ohio, was delegated to continue with the work and was empowered to employ such legal assistance as may be deemed necessary.

Time and place for the 1945 annual convention were discussed at length, with a committee composed of the president and secretary appointed to act in making final arrangements. It is expected that plans will be announced in about two months. Definite

decision to hold a 1945 convention was made after considering travel and hotel accommodations and their effect on the meeting.

Report of the committee delegated to represent the industry in Washington to secure an increased appropriation for soybean disease work was given by David G. Wing. Continued work along this line is contemplated, although it is expected an increased appropriation will be available this year.

Acreage goals for soybeans and other crops received considerable attention at the meeting. The overall picture seemed to indicate some shifts in acreage, with extensive increases in southern states and some reduction in northern areas. Price guarantees now being proposed by AAA were accepted as satisfactory.

An editorial board for the *Soybean Digest*, consisting of one key man in each of the major soybean producing states, was discussed at length, and formal authorization for its organization was given. The president and secretary were authorized to confer with directors from the respective states and proceed with the naming of members of the editorial board, and with its organization.

Nine members of the board of directors attended the meeting together with two visitors who had been invited to attend and participate in the discussions. The meeting was held at Hotel Morrison.

SOY OIL IS PINCH HITTING

By DOROTHY P. BAYLES

Fats and Oils Unit, Bureau of
Foreign and Domestic Commerce
from DOMESTIC COMMERCE

PRODUCTION of soybeans in the 1944-45 season is estimated at 179 million bushels from which an oil yield of 1,100 million pounds can be expected. The relative importance of soybean oil to the total amount of domestic vegetable oils has been increasing in recent years. In fact, its production now approaches in size that of cottonseed, the largest single source of supply.

Soybean oil first became important during World War I, when heavy imports helped to release domestic oils needed overseas. Imports of 336 million pounds in 1918 were the highest ever received in this country. However, these foreign purchases decreased sharply to 196 million pounds in 1919 and averaged only 19 million pounds yearly during the 1920's. In the thirties, the average yearly imports dropped to eight million pounds and less than one million were received in 1941.

The 1930 Tariff Act played an important part in the life of the domestic soybean. By this act, the import duty was raised from ½ cent to 2 cents per pound on the beans and from 2.5 to 3.5 cents per pound on the oil. However, even with this encouragement there was no great increase in soybean oil production until the 1935-36 crop year. Reduced supplies of lard and cottonseed oil, due to drought conditions, increased the demand for soybean oil for edible purposes.

PAINT INDUSTRY INITIAL USER

Prior to that time the most important outlet for soybean oil was in the paint and other protective coating industries. But since then the predominant use of soybean oil in this country has been in edible products. This does not mean that the paint and varnish industry has used less, but rather that the huge increases in total production have been absorbed by the edible products industry with only a small increase in total use in drying-oil products.

Use of soybean oil in protective coatings remained about 2 to 2.5 percent of total oils employed by that industry from 1930 until the outbreak of the Sino-Japanese war in 1937. Then with the curtailment of tung oil supplies, it rose in importance until in 1941 it represented 4.7 percent of total oils used for drying purposes. The decline in 1942 and 1943 to slightly under three percent resulted from adequate supplies of linseed oil and the increased demand for edible oils.

Production of Soybeans and Soybean Oil [1932-44]

Crop year beginning October	Produced	Crushed	Oil obtained	Ratio oil to bu. crushed	Ratio oil to lbs. crushed	Percent of production crushed
	Thousand bushels		1,000 lbs.			
1932	15,158	3,469	29,078	8.3	14.0	22.9
1933	13,509	3,054	26,196	8.6	14.2	22.6
1934	23,157	9,105	78,123	8.6	14.3	39.3
1935	48,901	25,181	208,965	8.3	13.8	51.5
1936	33,721	20,619	183,711	8.9	14.8	61.1
1937	46,164	30,310	279,279	9.2	15.3	65.7
1938	61,906	44,648	416,111	9.3	15.5	72.1
1939	90,141	56,684	533,417	9.4	15.6	82.9
1940	77,468	64,056	564,417	8.8	14.6	82.7
1941	105,587	77,131	706,661	9.2	15.2	73.0
1942	187,155	133,454	1,198,000	9.0	15.0	70.8
1943	196,000	133,000	1,200,000	9.0	15.0	67.9
1944	179,000	122,000	1,100,000	9.0	15.0	68.0

¹ Estimated by Fats and Oils Unit, U. S. Department of Commerce.

Source: Soybean production, Department of Agriculture, 1943 and 1944 estimates. Soybeans crushed, Bureau of the Census, U. S. Department of Commerce. Oil production, Bureau of Census.

Factory Consumption of Soybean Oil by Classes of Products [Million pounds]

	1939	1940	1941	1942	1943
Edible products:					
Shortening	202	212	216	336	568
Oleomargarine	71	87	76	133	198
Other edible	32	40	48	61	125
Total	305	339	340	530	891
Inedible products:					
Soap	11	18	25	31	15
Paint and varnish	22	30	42	25	21
Linoleum and oilcloth and printing ink	6	7	8	1	x
Miscellaneous and loss	26	38	49	55	128
Total	65	93	124	112	164
Grand total	370	432	464	642	1,055

x 321,000.

Source: Bureau of the Census, U. S. Department of Commerce.

Soybean oil is usually classed as a semi-drying oil, whereas linseed oil is a full drying oil. As quick drying is one of the prime requisites for a paint oil, soybean oil can ordinarily be used in paints and varnishes only in combination with some other oil of higher drying qualities such as linseed, perilla, or tung. Or it can be fractionated, at some cost, and the quicker drying parts of the oil used. As a result of these factors soybean oil for paint and other drying oil purposes sells at a definitely lower price

Freshly expelled soybean oil runs into a large tank to await filtration. The filtered oil will be shipped to refineries, where it will be processed to make shortening, salad oils, and other food products.

—USDA Photograph by Knell.



than linseed oil. It, however, possesses one advantage over linseed oil in that paints made from it do not as readily yellow with age.

War has once again made soybean oil an important factor in the food scene. The demand for edible products for Lend-Lease and military purposes increased markedly after 1941. Of all domestic crops, soybean output could be increased most effectively—and it was increased.

We were losing annually imports of approximately a billion pounds of oils, cut off from copra and coconut oil supplies of the Netherlands Indies and the Philippine Islands and from palm kernels, or palm oil from British Malaya or the Netherlands Indies. Even previous to 1941 our supply of tung oil from China was sharply curtailed. Production of soybean oil, while of a different type than these Far Eastern oils, has been increased half a billion pounds to fill part of the gap in total supplies and to meet wartime edible needs.

WHAT IT CAN DO

It is in the edible field that soybean oil has had its most important use, being employed in the manufacture of margarine, shortening, salad oils and other foods. Like most oils, soybean has to be refined before it can be used in edible products.

Further processing is required to bleach the oil. This is done by agitating it with some solid material which absorbs the color, which usually varies from yellow to dark

amber, depending on the method of extraction and the variety as well as the quality of the beans. Steam is blown through the oil to remove disagreeable odors or flavors, since the substances responsible for these are usually volatile.

The chemists have performed an invaluable service for the soybean industry, as refining of the crude oil for edible uses has been a major technical problem. Crude soybean oil to compete with cottonseed sells under the latter's price to compensate for the greater cost of processing required to make it a bland, stable oil.

When refined and bleached, soybean oil can be sold as a salad oil, but further processing is required if it is to be used in oleomargarine or shortening. For those products more body must be given to the oil and the process of hydrogenation provides the means. Pure hydrogen gas is utilized by forcing it through the oil in the presence of a catalyst so that all parts of the oil are combined uniformly with the gas. As the oil absorbs the hydrogen, it gradually becomes firmer and often improves in color, odor, and flavor, as well. Thus the chemists are able to change a liquid to a firm cooking fat. These various refining processes have one other purpose—they make one fat substitutable for another.

Soybean oil is not among the preferred fatty raw materials for soapmaking. However, during World War I it was used for this purpose because of the shortage of other products. The demand for the oil for edible products at present precludes its use in sizable amounts in the soap kettle.

The Feed Situation

• NO TIME TO RELAX

By WALTER C. BERGER

Chief of the Feed Management Branch, War Food Administration, at a meeting of the Western Grain and Feed Ass'n., Des Moines, Iowa.

Taking a look at the whole feed situation, we find prospects much better than they were a year ago. Total feed concentrate supplies for the 1944-45 feeding year, including feed grains, probable imports of grain, the quantity of wheat and rye fed, oilseed cake and meal, animal proteins and other mill-by-product feeds, will be the third largest on record, but will be somewhat smaller in volume than in 1943-44. The supply per animal unit, however, is expected to be about 10 percent larger than in 1943-44. With fewer numbers of livestock on farms, the 1944-45 feed grain supply may be 13 to 15 percent larger per animal unit than last year.

Turning to high-protein feed, we find that the estimated supply for 1944-45 would apparently permit feeding at a rate somewhere between 125 and 130 pounds per livestock production unit (other than horses and mules). This would compare with 116 pounds last year, when consumption was limited by the available supply. There are some things, however, which we should consider in planning the level of protein feeding this year. For one thing, some of our

allies in this war need high-protein feeds badly to help get their livestock production back on its feet. It might be constructive to be in a position to supply part of these urgent needs.

As a direct result of the improved protein meal situation, the War Food Administration was able to announce on November 17 the partial revocation of War Food Order No. 9—the order which controls the distribution and use of protein meals. Feed manufacturers' quotas and all inventory provisions were removed, but the set-aside and distribution provisions were retained. This action was taken in line with the established policy of removing war-time regulations as soon as possible.

We hope it will not be necessary to return to quota regulations at any time in the future, and we do not think it will be. However, any substantial disturbance in the current pattern of distribution, or unexpected developments in the general situation, could make it advisable to reinstate restrictions on protein meal use. We mention this as a possibility, not as a probability, because conditions can change very fast in war time.

Where are we now, as we look ahead at the whole feed situation? That is the question that farmers and industry are especially

(Continued on page 14)

Concentration of the soybean growing industry in the four Midwestern states of Iowa, Illinois, Indiana and Ohio, and the spread of the industry in recent years is shown in this dot map of 1943 soybean acreage for harvest prepared by the economics and research section of AAA's north central division from data supplied by the Division of Agricultural Statistics of the Bureau of Agricultural Economics.



Food Uses FOR SOYBEANS

• Donald S. Payne is food technologist and L. S. Stuart is senior marketing specialist in the War Food Administration. From an address before the Wartime Public Health Conference of the American Public Health Association in New York City, October 3-5.

WITH THE ENTRANCE of the United States into World War II, the government decided that it was strategically essential to hedge the supply situation on proteins of high nutritional quality against possible shortages of animal protein.

Government representatives urged soybean processors to expand facilities so as to be able to produce a large volume of products of low fiber content for human consumption in the event that they were needed. Processors responded promptly to this request. An annual capacity of about one billion, 400 million pounds was speedily provided.

The public announcement of a large extension of facilities for manufacturing soya products was immediately viewed with alarm by many old and established food industries. It would appear, therefore, to be an opportune time to review briefly why the use of soya products was encouraged by the War Food Administration and the progress that has been made in developing new uses for these products in foods.

In general, the thinking of nutritionists has become so intently directed toward the well-known specific nutritional diseases and the accessory growth factors associated therewith that the importance of proteins and protein quality is frequently assigned a secondary role.

It is not surprising, therefore, to find data compiled on this point often inadequate and frequently quite contradictory. From a recent report of the National Research Council which sums up the results of six local surveys on the adequacies of various dietary elements, it would appear that protein deficiencies may be quite common and widespread, locally.

The figures cannot be considered as representing an adequate statistical sampling of the entire population of the United States. They do indicate, however, that serious protein deficiencies may be the rule rather than the exception in certain urban and industrial areas of Pennsylvania, in New York City and in rural districts of Tennessee and North Carolina. These figures are all the more startling when the fundamental role of dietary protein is taken into consideration.

Emphasis is placed on need for greater consumption and a more equitable distribution since production of animal proteins of high nutritional quality now exceeds five billion, 250 million pounds annually. This would be adequate to supply basic nutritional needs if distribution was carried out in such a manner as to take full advantage of the supplementation effect of these proteins for available but incomplete cereal proteins. It seems reasonable to assume that

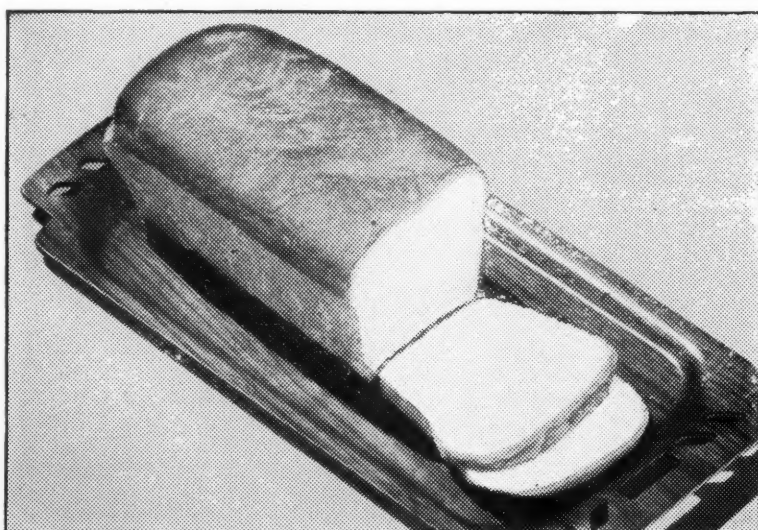
the principal cause for maldistribution and underconsumption with these foods is economic. The basic remedy for this condition is, therefore, the provision of an adequate supply of low-cost, high-quality, protein foods.

The nutritional values of proteins of vegetable origin are usually inferior to those of animal origin but those of the soybean, corn germ, wheat germ, peanut, chick pea, and oat possess relatively complete assortments of the essential amino acids and have high nutritional quality either when fed as the sole source of protein or as supplements for other incomplete proteins.

The American soybean crop is the largest single available reservoir of vegetable protein possessing high nutritional quality. This protein can be processed for human consumption at an average cost of one-tenth that of animal proteins. Thus, in this available reservoir of soybean protein, we can find the basic remedy for maldistribution and underconsumption of proteins; namely, an inexpensive protein of high nutritional quality.

The largest single use of soya products developed to date is in bakery products. It has been repeatedly demonstrated that soybean proteins combine with wheat proteins to yield products of superior nutritional quality. It appears that soybean proteins not only supplement wheat proteins in bakery goods but may also supplement milk protein as well.

Soya flour is used in a wide variety of bakery goods. The concentration which can be used in any bakery product depends primarily on the quantity and quality of the gluten contained in the wheat flour used. Soybean protein contributes nothing to dough strength although it may impart other desirable physical properties to bakery doughs. In white bread, it is usually used at levels ranging from 2.5 to 5.0 percent on the weight of the flour used. In doughnuts and sweet doughs, it may be used at levels



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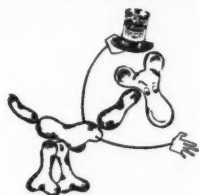
Consumer tests show that 7 percent soy flour in white bread does not affect consumption rate.

And Soybean Products

By DONALD S. PAYNE
and L. S. STUART



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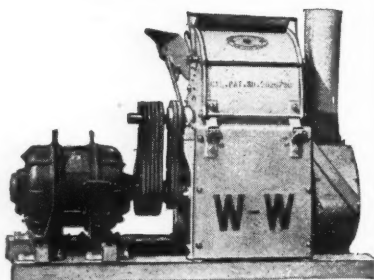
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ranging from six to ten percent. In specialty breads and cakes the concentration may vary from as little as ten to as much as 25 percent.

Bakers have ascribed definite physical advantages to the use of soya flours. For example, in white bread, use at three to five percent levels has been reported as retarding loss of moisture, inhibiting staling of the resulting loaf and prolonging mixing time tolerance. In sweet dough, use at levels of six to ten percent has been reported as producing a richer, more uniform appearance, a browner crust color and an improved crumb structure. In doughnuts, the use of six to seven percent of full-fat soya flour inhibits absorption of excessive amounts of fat during deep-fat frying.

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Possibly soya products have received more adverse publicity from the standpoint of the effect that they may have on the flavor of foods than on any other score. Thus, it seems appropriate to discuss at this point the results of a recent study to determine the influence of soya flour on the flavor and consumer acceptance of white bread. In this study, the soya flours used were composite samples made, according to type, from regular production runs of five large soya flour companies. Thus, the final results cannot be attributed to any special flour or disembittering process. All three types of flour were tested in white bread at levels ranging from five to seven percent. Tests were made on bread containing the individual types of flour in three separate, consecutive 30 day periods during which no other white bread was served. In all, 715,999 pounds of bread were served at 3,787,498 meals. Flavor acceptability and taste fatigue were judged solely on the quantity of bread consumed. The test groups were made up of inmates from state institutions and were not informed of any changes made in bread formularies or even that the tests were being conducted.

Results showed a progressive consumption of slightly increased quantities of bread during the 90-day period required to conduct the 3 consecutive tests. Per capita consumption was as good or better than for standard white bread served during the 30-day period immediately preceding the test or for the corresponding 90-day period of the previous year.

From these studies, it would appear then that the use of soya flour in white bread at levels of five to seven percent did not adversely affect flavor acceptability or induce taste fatigue.

PANCAKE PRE-MIXTURES

Soya products have been used rather extensively in prepared pancake and muffin pre-mixes at levels ranging from 10 to 25 percent. Here the nutritional story is much the same as with bakery products. Since it is possible to use soya flour at slightly higher levels in these products than in bakery goods, the supplemental effect of soya proteins for wheat proteins is usually more pronounced.

Similar nutritional advantages can be gained from the use of soya flour in paste goods. The limiting feature on use here is, as with bakery products, the quality and quantity of protein in the wheat flour employed. Strong doughs are absolutely essential to the practical production of paste goods. Some paste goods producers report definite improvements in color when they use soya flour.

The excellent nutritional quality of oat proteins has been firmly established. Recent tests show, however, that the addition of soya products to such a cereal as rolled oats results in an improvement in protein quality.

The inclusion of 20 percent soya flakes to a ready-to-eat rolled oat cereal formula increased the amount of protein available by 7.16 percent and the relative nutritive efficiency of the protein by 14.3 percent. The additional inclusion of 14 percent nonfat

dry milk solids further increased the amount of available protein to 10.13 percent above that of the original cereal and the nutritive efficiency of the protein to 98.5 percent of that found for nonfat dry milk solids.

Second in importance only to the baking industry as a consumer of soya products is the meat packing industry.

While it can be stated that animal proteins are usually more complete from the nutritional standpoint than vegetable proteins, this does not mean that the proteins of all packing house tissues used in prepared meats are perfect or complete nutritionally. The work of Hoagland and Snider (9), (10), (11) and (12) shows quite conclusively that the proteins in such tissues as tripe, sweetbreads, beef cheeks, ox lips, ox palates, hog snouts and pork cracklings have distinctly lower nutritional values than those of the muscles, hearts, tongues, livers and brains of the ox, veal and hog. It is important, therefore, in using tissues containing proteins of low nutritional quality in prepared meat products that they be blended with other animal or vegetable proteins in such a manner as to provide protein supplementation effects. This is one way to provide consumers with a large volume of low-cost protein food possessing the highest nutritional value.

It has been demonstrated repeatedly that the inclusion of soya grits in comminuted meat products in quantities up to 10 percent increases the protein content of the resulting product. It also conserves calorie values through the prevention of excessive fat separation during a canning process or the frying away of large quantities of edible fat during preparation for serving. Repeated small scale tests indicate that those advantages can be gained without adversely affecting palatability or consumer acceptance.

In England the addition of seven percent soya to all prepared meat products has been

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required by law during the war period. In the United States, its use is at present restricted to pork scrapple.

Soya products can be used in the home to add protein and lend variety to meals. It is really surprising how much protein can be added to a meal by including a small quantity of soya flour or soya grits to a selected home recipe for vegetable chowder, vegetable stew, sweet potato souffle, potato cakes or cream soup, to mention a few.

Historically, the oldest foods prepared from the soybean are the soybean milks, soybean curds and soybean cheeses of the Orient. There has been no large volume production on products of this type in the United States. Some processors are now experimenting with extraction processes using whole soybeans, expeller products and extraction flakes with the view to developing curds and cheeses or spray dried products which can be produced on a volume basis at low costs. The possibilities in this direction seem very bright.

Soya products are being used extensively in the manufacture of candies. Increased use in this field has been linked closely with the activities of the campaign of the National Confectioner's Association to improve the nutritional balance of candies especially with respect to protein, mineral salts and vitamins.

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— s b d —

BRITISH BOOST SOY FLOUR

Scottish Amalgamated Trade News Agencies
Boreland, Dysart, Fife

The British Ministry of Food in November featured soy flour as a product that every British housewife should know and use.

This despite the fact that distribution is

by no means perfect and despite the fact that some inquiries have failed to find supplies in their retail shops. The ministry admits this when it advises such people to ask their dealer to get it. This is excellent in theory but not in fact, inasmuch as most retailers have so much to do and so limited staffs to do it, that they fall down on ordering special things for special people.

It is nevertheless pleasant to find soya being given so much prominence as to be starred in the current Food Facts campaign series. Soy flour is recommended as: "something about which every housewife should know for it provides another good way of adding extra nourishment to the family's meals. Many shops have it, or will be glad to get it for you and the price is 5d a lb. Use it to thicken soups, stews and sauces and eke out the milk with it. Add

it to your biscuit and batter mixtures and make attractive sweets and savouries with it."

A recipe is given for use in "cakes, biscuits, pastries" suggesting that 1 oz. of soya be mixed with 7 ozs. of flour, mixing the two and proceeding along the usual lines. A warning that soy flour cannot be used alone as it neither rises nor binds well, is given. The use of soya as an extender for milk is also cited, the recommended quantities being 2 oz. to a pint of water, mixed with an equal quantity of tinned, fresh or dried milk.

Apart from this recent reference soya has had a poor popular press and has not been boosted to the public to any extent although occasional references get into the press suggesting its use. The public, on the other hand is definitely interested.

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SOYBEAN AS A HONEY PLANT

Beekeepers are much interested in soybeans, if only from a negative standpoint. Soybeans ordinarily do not yield nectar from which the bees make honey, yet they have replaced large acreages of clovers and other plants that do furnish bee pasture. As a result many commercial beekeepers have had trouble in maintaining their apiaries during the past few years.

Soybeans occasionally do yield nectar, however. There were several reports of light crops of soybean honey during the 1944 season.

Alfred P. Johnson of Illinois reports in *American Bee Journal*:

"On July 31, and perhaps a few days

before, bees were observed going to the fields in great numbers in a fairly heavy nectar flow. A check was made of all plants and blooms and we found soybeans the source of the flow. One colony stored 20 pounds in three days. Some gained 5 and 7 pounds a day.

"When capped and ripened, the honey seems to be of good flavor, body and light color. Imagine soybean honey of all wonders. This is the second season, 1941 and 1944, that bees have worked soybean blossoms and made noticeable gain."

Now the \$64 question of the beekeeper is, why do soybeans at times yield nectar but not at other times?

Are some varieties good nectar yielders but not others? Do soybeans yield nectar on some soils but not on others? Or are climatic conditions the controlling factor?

Beekeepers are convinced that soybeans are here to stay although clover acreage may rise once again after the war. For this reason they are under the necessity of finding the correct answer to the above questions, since the future welfare of their not small industry may depend in part on it.

—s b d—

E. D. FUNK, SR. HAS PASSED

E. D. Funk, Sr., 78, nationally known seedsman of Bloomington, Ill., died at the Mennonite Hospital in that city November 28 after an illness of some weeks.

Mr. Funk was founder and head of Funk Bros. Seed Co., and founder of the soybean processing mill operated by that firm. He served in the food administration of Herbert Hoover during World War I and was endorsed for secretary of agriculture in both the Coolidge and Hoover administrations. He was one of the earliest growers of hybrid seed corn.

It is said that Mr. Funk's last public appearance was his attendance at the American Soybean Association's Silver Jubilee meeting at Urbana, Ill., in September. He went to the hospital shortly after that.

—s b d—

SCHOOLS TEACH SOYBEAN USE

The first local leader training school dealing with edible soybeans was held in Shelby County, Ill., in February, 1943. Since that time interest has developed in many sections of the state.

Some of the Illinois schools working under the federal-state school lunch plan are using soybean sandwich spread in their menus. Nutritionists are emphasizing the fact that soys are a good food in themselves and should not be looked upon as a substitute.

—s b d—

BERGER

(Continued from page 9)

concerned about. It is estimated that a total of about 145 million tons of concentrate feed will be available during the 1944-45 year, after allowing about 15 million tons of feed grain for seed, food and industrial uses. If we feed somewhere between 125 and 130 million tons during the year, depending on rate of feeding per animal unit, we can

build the feed concentrate carryover back to safer levels—somewhere between 15 and 20 million tons next fall, as compared with 10.8 million tons at the beginning of the present feeding year. About 140 million tons of feed concentrates were used as feed during the 1943-44 year. Wise adjustments in livestock production, particularly for hogs and poultry, bring the 1944-45 estimate down to the 125-130 million range of probable consumption. There are expected to be about 147 million grain consuming animal units on farms next January 1, as compared with 171 million on January 1, 1944. It looks as though we will be able to feed our stock in 1945 at the same or a better rate per unit than during the past year.

The situation is encouraging, but it is not one which should cause us to relax and think that we are entirely out of the woods. We still need to plan carefully, keeping an eye on the relationship between feed supplies and livestock numbers.

As you know, War Food Administrator Marvin Jones recently announced the suggested goals for 1945 production, calling for a total crop acreage very close to the 1944 plantings. These goals may be larger than some have expected. Total agricultural production this year is about 33 percent above the 1935-39 average. With the general expectation that the war in Europe will not last through another crop year, farmers are naturally beginning to wonder about possible surpluses.

A careful check shows the need for continued high level production next year.

BETTER HAVE TOO MUCH

In considering 1945 production the War Food Administration has felt that, if a choice must be made, it would be far better to take a chance on having too much rather than too little. There can be unexpected developments in both production and demand. Farmers know this, and they also know that we cannot gamble with our vital food supplies.

Farmers are naturally greatly interested in the prospective markets for their production. They know that some of the demand for the armed services and our allies may be cut down when the shooting stops in Europe. They also know, however, that the war will probably still be going on in the Pacific; that our soldiers cannot all come home at once; that they will still eat when they return to civilian status. There will also be relief needs abroad, and some commercial exports. Domestic civilian demand can be expected to continue at relatively high levels.

Weighing all factors carefully, the conclusion is that 1945 should be another year of full production effort.

Before closing, I want to express my sincere appreciation for the role the feed industry has played in the nation's successful food production effort. The record will show that the feed industry ranks high among those who have fought the battles of the production fronts. Keep it up a little longer, and our war-time troubles will be behind us.

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BANKS

(Continued from page 7)

fertile part of each farm. (2) During this period there were no well adapted varieties of beans for Missouri. (3) The average farmer of the state was an "amateur" on beans but a "professional" on corn because corn growing was traditional, had the tools of production and harvest available, and received the lion's share of attention. (4) There were no well established markets for beans during this 1930-39 period.

Regarding the future of soybeans-for-beans in the northeast section of Missouri, Professor C. A. Helm of the Missouri Department of Field Crops, told the speaker in November, 1944, "On fairly level land either naturally fertile or made so by good farm practices, soybeans are as good a cash crop as corn; and, when insect, disease and climate hazards are considered, beans are a much safer crop than corn." Audrian County soybeans are not a bonanza or a get-rich-quick deal, but certain facts are definitely favorable. You farmers are out of "the amateur class;" you know how and you have the equipment, the varieties and the market.

GOOD NEIGHBOR POLICY

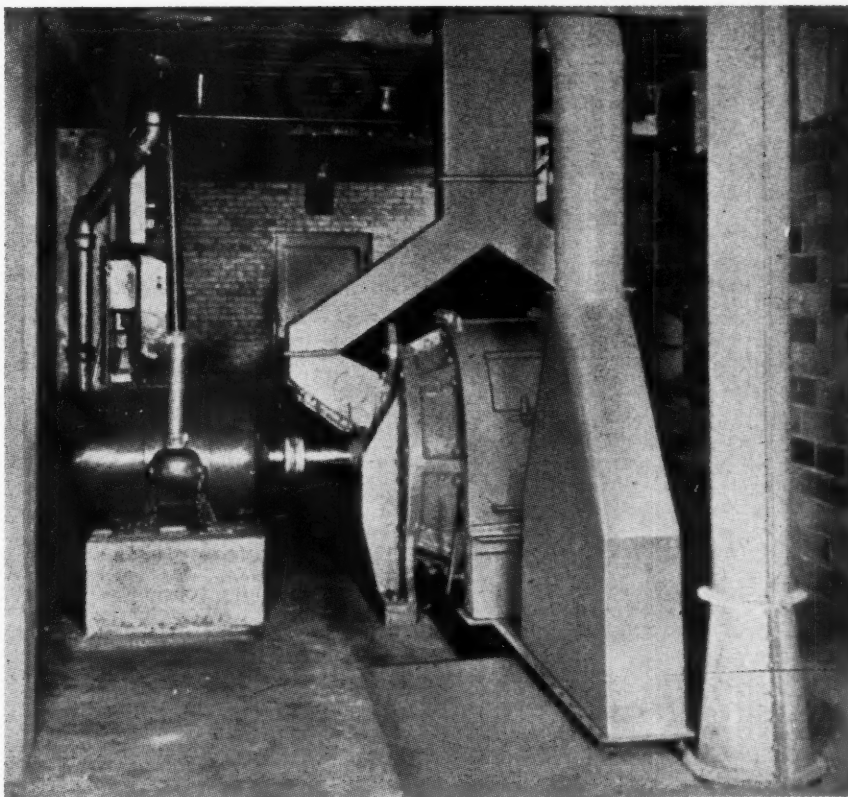
Some folks are worrying about the price of beans to the American farmer when the war is over a couple of years and the Good Neighbor or "World-Brotherhood" idea might allow our ports on both oceans to be flooded with extremely cheap oils of tropical origin. I am worrying too. It is definitely a fly in the ointment and a pretty big fly. But there may be some offsetting factors. It hardly seems reasonable that labor in the tropics will ever go back to the "dime-a-day" wages we heard so much about some years ago. Transportation costs will undoubtedly be higher. The American farmer by his superior methods of production has held his own with crops such as wheat and pork. With proper emphasis on varieties, choice of soil, maintenance of soil fertility, he can grow beans in competition with the world. But it won't be easy.

Rarely has there been a crop so well adapted to spectacular journalism. You can hardly make a false statement about the uses of soybean, because almost everything can be made partly from some soybean derivative. Plastics, glue, lecithin, paint, enamel, soap, ink, linoleum, to name a few. The result has been that a flood of newspaper articles have appeared and the public has come to expect too much. But the United States of America has the habit of making dreams come true.

Hsaing Kai Lee of the Ford Motor Co. said in the November *Soybean Digest*—"The soybean can yield 36 times as much energy food as the same amount of farm labor used to produce meat. One acre of land in soybeans can yield as much food as 11 acres devoted to raising livestock." Now I'm not "fixin'" to voluntarily shift my diet away from meat entirely and go to beans, but neither am I blind to implications of this 36-to-1 ratio in terms of farm labor. Maybe the processors of soybeans will get out new products and the country may need 20 million acres instead of 10 million. It's another one of those many "maybes" we have to use when we "deal in futures."

DECEMBER, 1944

NEW FIELDS DEMAND NEW DEVELOPMENT



IF GRINDING IS INVOLVED

THE extension of existing processes to new fields usually brings with it specialized problems.

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GROWERS



Soybeans Used As Hay

Soybean hay, when properly handled, compares favorably with alfalfa in total protein and mineral content, according to H. J. Snider, assistant chief, soil experiment fields, University of Illinois College of Agriculture. "Averages of a large number of tests showed that a ton of dry soybean hay contained 272 pounds of protein and 64 pounds of essential minerals. A ton of dry alfalfa hay contained 344 pounds of protein and 74 pounds of essential minerals. These averages are for hay from various parts of Illinois. The soybeans were cut for hay when the leaves were still green and the pods well filled," Snider reported.

"Soil treatment consisting of limestone and legumes was found to improve the feeding quality of soybean hay on the Oblong, Ill., experiment field. On this land, where lime was added and legumes plowed under, the soybean hay contained 54 more pounds of protein in a ton than that from unlimed land. This soil treatment also increased the hay yield 500 pounds an acre."

Soybean hay on the Oblong, Ill., experiment field was found to be made up of 40 percent leaves by weight. Approximately every ton of dry hay properly handled in this test contained 800 pounds of leaves. In addition, the leaves were found to be very high in feeding quality, according to H. J. Snider.

Each ton of leaves contained 286 pounds of protein and 85 pounds of essential minerals. The leaves contained approximately 30 percent of the total protein in the hay crop and nearly 50 percent of the essential mineral.

"Leaves are easily lost in the operations necessary in harvesting, storing and feeding soybean hay. Precautions should be taken to save soybean leaves and see that every pound of them is placed in the feed rack so that livestock may have the benefit of their high protein and high mineral content," Snider advised.

Suggestions given by Illinois agricultural engineers to save the maximum quantity of leaves included using a tight bottom feed rack, minimizing the number of times of moving the hay to reduce excessive shattering of the leaves, cutting it at the slightly green stage and windrowing or putting it into haycocks so that a quantity can be picked up later as a unit, which operation will reduce leaf-shattering.

Problem of Defoliating

Before soybeans can be combined, they must be dry enough to thresh and the leaves and any weeds growing in them must be dry enough so they will blow out while the threshed beans drop through the riddles. This has usually meant that beans could not be

combined until there had been a hard frost, so that the leaves would drop off and the weeds dry up.

In 1943 Cyanamid was first used to defoliate soybeans and make possible earlier combining. This might avoid much loss in some years. In the year 1942, for instance, many thousands of acres of soybeans were lost in the middlewest because they were not in condition to be combined until a heavy snow had fallen and they were too badly lodged ever to be salvaged. If the leaves had been removed before the snow fell, the plants would not have been dragged down by the snow and the beans might have been harvested later.

The 1943 work at the Ohio Agricultural Experiment Station indicated that it required between 75 and 100 pounds of Cyanamid dust per acre to defoliate soybeans. The work during the present season also bears out this estimate. E. E. Barnes, Associate Agronomist at the Ohio Experiment Station, states that beans dusted on September 11 had shed all their leaves by September 18. On September 22 other plots were dusted; only 2 days after the second date of dusting, a heavy frost killed the leaves. In a week all the plots were bare of leaves, whether they had been dusted or not.

On September 29 the moisture content of the beans on three plots was determined, and a week later, on October 6, it was again determined. The beans from the plot which was not dusted contained 47 percent moisture on September 29; a week later this had fallen to 31.2 percent. The beans from the plot dusted on September 11 contained 23.2 percent moisture on September 29 and only 17.9 percent a week later. The beans from the third plot which was dusted on September 22, only 2 days before the killing frost, contained 30.1 percent moisture on September 29 and a week later this had fallen to 19 percent. These results look promising but more experimental work will be required before it will be known whether or not it is practical.

Don't Burn Soy Straw

"Burning soybean straw following the combining of soybeans is about as wasteful as using ear corn for fuel in the cook stove," asserts Allan T. Leffler, extension agronomist at Iowa State College.

Soybean straw has two main values: (1) the plant food and organic matter contained, and (2) the way it serves to reduce soil erosion.

Nitrogen is the principal plant food lost by burning. The straw on the average soybean field contains about 20 pounds of nitrogen per acre, which would cost about \$2 if replaced in the form of commercial fertilizer. When the straw is windrowed before burning, the phosphate and potash will remain in the ash but will be poorly distributed over the field.

In a series of test fields in central Iowa in 1942, the Iowa Agricultural Experiment Station found that corn yields averaged from eight to nine bushels more per acre where corn followed soybeans as compared to corn following corn in the rotation.

"It would seem fair to attribute half this increase to the value of straw," Leffler states.

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GRITS AND FLAKES

FROM THE INDUSTRY



Harold Vagtborg, director of Armour Research Foundation, Chicago, has been named president of the recently formed Mid-West Research Institute at Kansas City. The latter scientific organization will undertake research projects on a nonprofit basis for small industries and large ones. Sponsors see in it an opportunity to give impetus to the development of the natural resources of the Midwest in the postwar competitive period. Among a wide variety of projects, studies are under way for developing proteins, fibers and other agricultural products. The Institute is to serve a six-state area which includes Kansas, Missouri, Nebraska, Oklahoma, Arkansas and Iowa. Under Vagtborg's direction the Armour Foundation has served 1,400 corporations and undertaken an average of 2,000 investigations a year. It is understood that the activities of the Kansas City group will be patterned somewhat on the Armour plan.

The Baltimore and Ohio Railroad Co., has issued a soybean map for Ohio showing elevators where oil-rich varieties may be obtained, in the hope that only these varieties will be planted. "The B&O is continuing its efforts for production of better quality beans—not from any philanthropic motive, but purely because we believe it good business to take an active interest in what the territory we serve produces," says O. K. Quivey, manager of agricultural development. The map may be obtained from Mr. Quivey at Baltimore 1, Md., or from Lester J. Miller, B&O agricultural agent, 16 E. Broad St., Columbus, Ohio.

An excellent crop of alfalfa can be grown, using soybeans as a nurse crop, reports Menno Workman, Tippecanoe Co., Ind. On May 20 this year he planted soybeans in the usual way and after three days sowed alfalfa seed, leaving it on top of the ground without further cultivation. After the most severe drouth in years, he had the finest stand of alfalfa he ever had, and also harvested a good crop of soybeans.

Dick Doughtie, in charge of the supervision of the cottonseed grading for the War Food Administration, with headquarters in Memphis, Tenn., is also handling the checking of soybean analysis for the Commodity Credit Corporation. His offices in the Falls Building in Memphis, Tenn., have been enlarged to handle the soybean work.

Friends will be glad to know that J. H. Lloyd, assistant regional director of Commodity Credit Corporation at Chicago, who has been confined to West Suburban Hospital at Oak Park, Ill., for several months, is making a nice recovery and should be out soon.

Central Soya Co., Inc., Ft. Wayne, Ind., and its subsidiary, the McMillen Feed Mills, have named Stockton-West-Burkhart, Inc., Cincinnati advertising agency, to direct national advertising for all their products.

Friends of Editor Geo. M. Strayer will be pleased to learn that he is now a sergeant. He is stationed at the headquarters of the Kansas recruiting district, U. S. Army, at Kansas City, Kans.

Lincoln soybean seed supplies are becoming exhausted in Indiana, states K. E. Bee-

son, extension agronomist at Purdue University. Growers interested in planting this variety must make seed reservations quickly.

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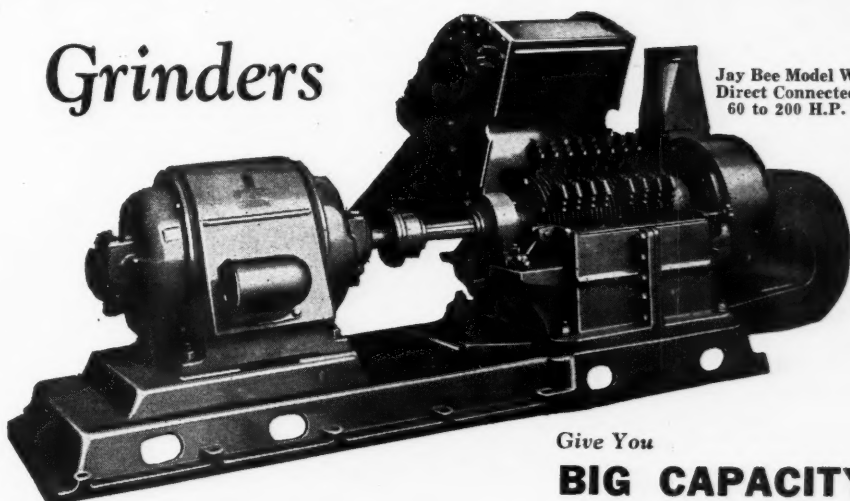
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WASHINGTON Digest

Oil Meal Set Aside

There are indications that the government set-aside of protein meal, now at 20 percent of monthly production, may be reduced early next year, possibly to 10 or 15 percent.

The decision will rest on the official size-up of protein feeds in relation to livestock needs after the first of the year, and estimates of the situation by War Food Ad-

ministration goals teams in their conferences with state officials.

A reduction in the set-aside is known to be under consideration. Both the amount of reduction and the time to make it effective are under debate. Chances are the cut will not come before February, since January, a month of severe weather, places heavier than usual demands on feed concentrates.

These are straws in the wind that point in the direction of some cutback.

This year's soybean production exceeded all earlier expectations, and the protein feed situation generally is looked upon as the most favorable since 1942.

War Food Administration has removed feed mixers' quota and inventory limitations contained in WFO 9 which controls distribution and use of protein meals.

Walter C. Berger, head of WFA's feed branch, plans after the first of the year to spend only part of his time in Washington and to devote more attention to his business in Des Moines where he is president of the Des Moines Oats Products Co.

Berger told *The Digest* he was not being released from his job, but that the general improvement in the protein meal distribution system would now permit a part time arrangement.

The partial revocation of WFO 9, announced late last month, permits these modifications:

(1) Feed mixers are no longer limited in their use of protein meals in the manufacture of mixed feeds.

(2) Restrictions on the amount of protein meals that can be held in inventory are discontinued.

(3) Except for linseed meal, certificates of compliance are no longer required from purchasers of protein meal.

In announcing the relaxation, WFA cautioned that care in distribution of protein meals is still necessary. It warned that "any substantial disturbance of the current pattern of distribution might make it necessary to reinstate limitations on feed mixers."

The industry also was urged "to take care of their normal trade requirements to the fullest possible extent, and to supply wherever possible the type of feed desired by the purchaser."

EDITOR'S NOTE: Last minute word reaching this office is to the effect that WFA set-aside requirements for January are for 15 percent of all soybean oil meal or pellets and all peanut oil meal; 15 percent of all the cottonseed oil meal, cake, or pellets produced in most plants east of the Mississippi and 20 percent west of the Mississippi; and 20 percent of all linseed oil meal and pellets.

No Change In Price

Soybean growers can count on a price support of not less than \$2.04 a bushel for the 1945 crop—the same support as this year and the fig-

By PORTER M. HEDGE

Washington Correspondent for
The Soybean Digest

ure indicated by *The Digest* a month ago.

War Food Administration's announcement of 1945 price supports said:

"Soybeans produced in 1945 will be supported at a price to farmers of \$2.04 per bushel for green and yellow soybeans grading No. 2 or better, with not more than 14 percent moisture content, delivered to country elevators or other normal producer delivery points.

"Premiums will be provided for lower moisture content and discounts for lower grades. Support prices will be 20 cents per bushel lower for brown, black and mixed soybeans. The specific schedule of support prices will be announced at a later date.

"Non-recourse loans at the support prices will be made available to farmers on soybeans produced in 1945 and stored on farms. The loans will be available until Jan. 31, 1946, and will mature on April 30, 1946, or earlier upon demand.

"The War Food Administration will also offer to purchase soybeans at the support prices through terminal and other elevators and to enter into price supporting contracts with processors under which processors will agree to pay not less than the support prices for soybeans purchased by them."

A boost in the price support on flax appeared almost certain because of the big increase wanted in acreage next year, but officials felt that the \$2.04 figure would be sufficient to attract the 10,688,000 acres sought in the soybean goal.

The paint and varnish industry is interested. It figures there will be a lot of catch-up painting to do after the war and wants plenty of ingredients on hand.

Fats and Oils Picture

Fats and oils are given high priority on the list of farm commodities needed for 1945 as U. S. participation in the war stretches into its fourth year.

War Food Administration gives this general picture of the fats and oils situation in its announcement of 1945 crop goals:

Fats and oils promise to be fairly tight next year. Bolstered by an all-time high output of lard, supplies were relatively abundant last spring.

However, lard production will be off about 800 million pounds next year compared with 1944, and the total output of domestic oils is expected to be somewhat less in the coming season than during 1943-44.

No important relief can be expected from imports until the Philippines and the Netherlands East Indies are liberated. Even then competition for supplies in these areas from European buyers will be intense.

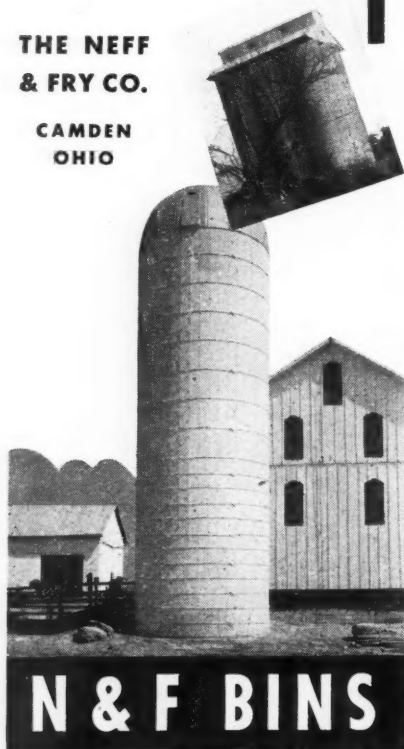
Lard exports are expected to be higher than during the immediate pre-war period

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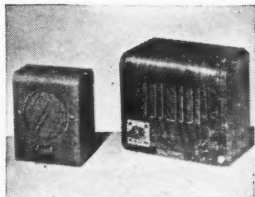
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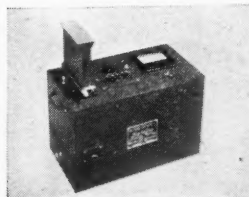
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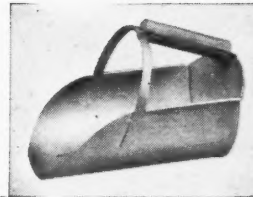
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for at least two years after the European market reopens.

Exclusive of butter and lard, fats and oils requirements for food are figured at about 3 billion pounds during 1945-46, and for non-food uses about 3.6 billion pounds. These requirements are about the same as the actual use in the year ending June 30, 1944.

About half of the 3 billion pounds needed for food is expected to come from soybean and peanut oil—1,260 million pounds of soybean oil and around 200 million pounds of peanut oil. Cottonseed is expected to yield 1,200 million pounds of oil, and corn 230 million pounds.

These requirements count on more oil from soybeans and peanuts grown next

year than will be available from the 1944 crop.

Fats and oils requirements for non-food uses include 775 million pounds of linseed oil, all but 100 million pounds of which would go to the drying oil industries.

Soybean Crop Insurance

Eventual crop insurance for soybeans became a prospect this month as the new crop insurance bill, drafted by the late Hampton P. Fulmer of South Carolina, advanced through congress.

The bill authorizes insurance next year on wheat, cotton and flax, and on virtually all major farm crops as soon as sufficient actuarial data are available. The Federal Crop Insurance Corporation plans to insure flax only next year, wheat and cotton the year following, and to run tests in 1945 on corn and tobacco.

The corporation also is authorized to experiment with other crops for which no actuarial data are now available. Soybeans fall into this category. But it's doubted that tests will be run on soybeans at least until 1946.

— s b d —

SOYS AND FERTILITY

As a result of a five-year test on an experimental field near Joliet, Ill., it has been found that a 25-bushel-an-acre soybean yield removed from the soil about 5.5 pounds of phosphorus and 30 pounds of potassium, according to H. J. Snider, assistant chief, soil experiment fields, University of Illinois College of Agriculture. At present prices for fertilizers, it would cost \$2.70, or approximately 10 cents a bushel of beans, to replace in the soil this amount of these two elements.

— s b d —

Wisconsin Beans

Hilmer B. Schauer, Hartford, Wis., grower, and his two children, Joyce and John in a field of Mukdens that went 30 bushels per acre.



Market Street

We invite the readers of THE SOYBEAN DIGEST to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

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SOY-GRASS COOKIES—Wheatless, sugarless, alkaline. The food sensation of the age and LAST WORD IN NUTRITION. 3 packages postpaid for \$1.00. ViVi-Ta Healthful Foods, 480 E. Main, Rochester, N. Y.

CERTIFIED EARLYANA Soybean Seed—Foundation seed from Purdue University. Early maturing and good yielder. Order early. Nichols Hybrid Seed, Lowell, Ind.

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SOYBEAN DIGEST

IN THE MARKETS

Soybean Supplies for 1944-45 About Equal Last Season's Record

• **QUARTERLY SOYBEAN MARKET REVIEW.** Fine fall weather has raised soybean prospects so that the indicated supply for 1944-45 is about the same as the record for 1943-44. The new support price has advanced farm prices to the highest level since production of soybeans reached commercial proportions. Disappearance of soybeans from the record 1943 crop was seven percent larger than from the 1942 crop as a result of the urgent demand for feed and commercial use.

Reflecting unusually fine fall weather which allowed the late planted soybeans to mature, a 1944 crop of 193,900,000 bushels was indicated November 1 or only slightly less than the record crop of 195,762,000 bushels harvested in 1943. The 10-year (1933-42) production was 68,771,000 bushels. Stocks of soybeans at the beginning of the season, October 1, 1944, amounted to 14,417,000 bushels compared with 12,543,000 bushels a year earlier. Stocks were larger in all positions with the biggest gains in the commercial holdings. With slightly larger carryover stocks and a crop almost as large as last year, supplies of soybeans for 1944-45 will amount to 208,317,000 bushels compared with 208,305,000 bushels available for 1943-44 and 193,155,000 bushels for 1942-43.

Reflecting an increase in the support price the farm price of soybeans advanced 11 cents per bushel from September to October. Prices received by farmers averaged \$2.04 in October which is the highest level since 1929 before large commercial production began. Compared with the October price the September average is \$1.93, October, 1943, \$1.80 and the 10-year (1933-42) October average 92.8 cents per bushel.

The quality of the 1944 crop as indicated by October inspections is above average but somewhat below the excellent 1943 crop. Of the inspected receipts in October 88 percent graded No. 2 or better compared with 95 percent in October, 1943; 58 percent in October, 1942, and 70 percent in October, 1941. Inspected receipts in October amounted to over 30,000 cars compared with 33,000 in October last year and 17,000 cars in October, 1942.

Disappearance of soybeans during the 1943-44 season was seven percent larger than in 1942-43, although disappearance of soybeans in the last half of the season was less than in the same period in the previous season. In the July-September quarter this year disappearance of soybeans amounted to 34,127,000 bushels compared with 34,843,000 in the same quarter a year earlier, while in the April-June quarter disappearance was 61,314,000 bushels this year as against 68,541,000 last year. Disappearance of soybeans for the 1943-44 season, beginning with October, amounted to 193,888,000 bushels compared with 180,612,000 bushels for the 1942-43 season.

Crushings of soybeans for oil, as reported by the Bureau of the Census, were 142,256,000 bushels in 1943-44 compared with 132,573,000 bushels in the 1942-43 season. Crushings of soybeans for oil totaled 31,813,000 bushels in the July-September quarter, 36,814,000 bushels in the April-June quarter, and 28,667,000 bushels in the July-September quarter last year.

Reflecting a considerable decrease in the last half of the season, consumption of soybeans for flour and grits for food in 1943-44 amounted to 5,733,000 bushels which is seven percent less than the 6,196,000 bushels consumed in the 1942-43 season. Consumption for the July-September quarter amounted to 836,000 bushels compared with 653,000 in the April-June quarter and 1,732,000 in the July-September quarter last year.

• **STOCKS OF SOYBEANS, OCTOBER 1.** Soybeans from the crop of 1943, or earlier, remaining in all positions, on and off farms, October 1, 1944, are reported at 14,417,000 bushels in a quarterly summary issued by the Crop Reporting Board. Included in this total are 4,840,000 bushels on farms, and 1,164,000 bushels in interior mills, elevators, warehouses and other establishments, as estimated by the Crop Reporting

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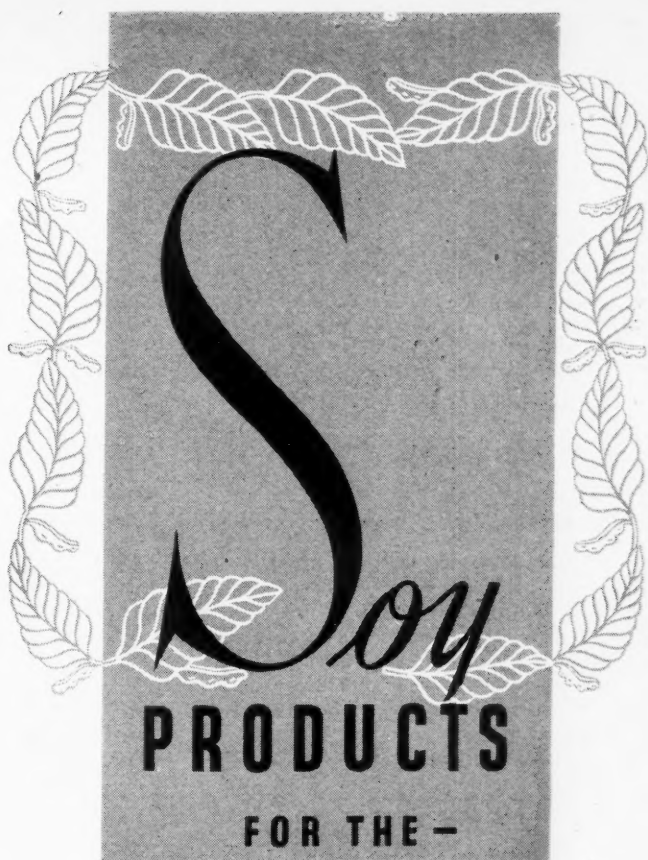
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Board; 5,214,000 bushels stored at processing plants, as enumerated by the Bureau of the Census; 1,323,000 bushels at the 46 terminal markets, as reported by the War Food Administration, and 1,876,000 bushels stored by Commodity Credit Corporation in their own steel and wooden bins. On July 1, 1944, stocks in these positions totaled 48,543,000 bushels. Disappearance during the quarter, July 1 to October 1, 1944, therefore, was 34,126,000 bushels. Stocks in all positions on October 1, 1943, amounted to 12,543,000 bushels.

Processing of soybeans for oil during the quarter, July 1 to October 1, 1944, amounted to 31,813,000 bushels, according to the Bureau of the Census. This quantity exceeds the 28,667,000 bushels crushed in the same period of 1943, with each of the three months running above the corresponding month of last year. A total of 142,255,000 bushels of soybeans had been crushed in the 12-month period ended September 30, 1944, or seven percent more than the 132,572,000 bushels processed for oil in the preceding 12 months.

New crop soybeans have begun to move into storage, but are not included in these estimates, except insofar as they may appear in the Bureau of the Census data on stocks at processing plants.

• **OCTOBER FOOD PURCHASES.** WFA's report of agricultural commodities purchased during October for lend-lease, territorial emergency, Red Cross and other purposes.

Commodity (Lbs.)	QUANTITY	
	October	Jan. 1, thru Oct. 31, 1944
Oleomargarine	255,000	71,875,275
Shortening	160,000	4,659,872
Corn Oil		1,135
Cottonseed Oil		22,138
Peanut Oil		2,259
Linseed Oil, Edible		211,984,753
Soybean Oil	16,478	99,130,743
Soybean Oil Meal	1,000,000	11,380,000
Soybeans		10,000,000
Soy Flour	1,900,000	4,900,000

• **OCTOBER INSPECTIONS.** The quality of the 1944 soybean crop, as indicated by the October inspections, is above average but somewhat below the excellent 1943 crop, according to inspectors' reports to the Grain Products Branch of the War Food Administration. Of the new crop, 87 percent graded No. 2 or better compared with 95 percent in October last season.

Receipts of soybeans inspected in October, the first month of the 1944-45 season, were slightly less than for the same month a year ago, and totaled 31,730 cars compared with 32,272 cars in October, 1943. Ninety-nine percent of the inspections classed as Yellow in October both seasons.

• **STANDARD SHORTENING SHIPMENTS.** By members of Institute of Shortening Mfrs., Inc.

Week ending Nov. 11, lbs.	8,523,807
Week ending Nov. 18	9,421,009
Week ending Nov. 25	8,399,361
Week ending Dec. 2	8,844,802

GOVERNMENT ORDERS

• **PROTEIN RESTRICTIONS REVOKED.** The War Food Administration has announced a partial revocation of War Food Order 9 which controls the distribution and use of protein meals, removing manufacturers' quotas and all inventory provisions but retaining the set-aside and distribution provisions. This order has been in effect since December 18, 1943.

The following modifications are effective immediately:

(1) Feed manufacturers are no longer limited in their use of protein meals in the manufacture of mixed feeds.

(2) Restrictions on the amount of protein meals which can be held in inventory are discontinued.

(3) Certificates of compliance are no longer required from purchasers of protein meal except for linseed oil meal which is covered by a special order issued October 18, 1944.

The current protein feed supply situation makes possible the lifting of the restrictions.

The provision of War Food Order 9 relating to the set-aside of a part of the current production of oilseed meal, and to the distribution of this set-aside meal, continues in effect. Also continued is the order applying to Oklahoma, Texas and New Mexico, which requires any person to obtain a certificate of purchase, issued by county agricultural conservation committees, for purchases during any 30-day period of more than 500 pounds of oilseed meal, (WFO 9. 13).

• **OIL DELIVERIES.** The War Food Administration has amended War Food Order No. 29, continuing through March 31, 1945, the suspension of restrictions on delivery of crude cottonseed, peanut, soybean and corn oils to refiners for refining purposes. The suspension began on October 1, 1943.

Authorizations for delivery of the four crude oils to all users (except refiners) will continue to be obtained from the Office of Distribution, and there are no changes in provisions of the order which require authorization for use of the four oils, and for delivery and receipt of refined grades.

Allocations will be made in December for January, February and March use and deliveries.